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Response to 1st Office Action dated 07/14/2006
Reply to 1st Office Action of 04/21/2006

REMARKS

In this Office Action, the Examiner objected to Claims 1 and 2 under 35 U.S.C. §112 and rejected Claim 11 under 35 U.S.C. §101. Claims 1 – 4, 6 – 8, 10 and 11 were rejected under 35 U.S.C. §103(a) as being unpatentable over Salas et al. in view of Hatakeda et al. Claim 5 was rejected under 35 U.S.C. §103(a) as being unpatentable Salas et al. in view of Hatakeda et al. and further in view of MATHCAD by Microsoft Inc. Claim 9 was rejected under 35 U.S.C. §103(a) as being unpatentable over Salas et al. in view of Hatakeda et al. and further in view of Hashemi.

Applicants have amended Claims 1 and 2 to overcome the 112 rejection made thereto. Applicants have also amended Claims 3 – 9 to better claim the invention. Further, Applicants have canceled Claims 10 and 11 and added new Claims 12 – 19 for consideration. Note that due to the cancellation of Claim 11, the 101 rejection made thereto becomes moot.

By this Amendment Claims 1 – 9 and 12 – 19 are pending in the Application. For the reasons stated more fully below, Applicants submit that the claims are allowable over the applied references. Hence, reconsideration, allowance and passage to issue are respectfully requested.

As mentioned in the SPECIFICATION, the Excel spreadsheet from Microsoft Corporation includes means for allowing a spreadsheet user to use a table label as an argument to a function. This feature is interesting in the sense that it relieves the spreadsheet user from mastering the way range of cells are addressed within an electronic spreadsheet. Nevertheless, it presents the drawback of being only used as function arguments, requiring thus that the spreadsheet user master the function call syntax.

The Lotus 123 spreadsheet from Lotus Corporation defines the concept of SmartLabels. SmartLabels allow user to associate a label with a function according to a predefined relationship. Facilities are made available within 123 to manage such relationships (for creating, editing, or canceling them). This

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feature is interesting in the sense that it only asks the spreadsheet user to learn the SmartLabels (which are very intuitive, like the label "total" to sum the various elements of a given field) instead of the function syntax. Nevertheless it presents the drawback of only facilitating the specification of function, but without specifying arguments other than using the reserved word "list" to represent a range of cells. So the interest is limited to conventional functions like summing, or averaging a range.

The limitations of the conventional spreadsheets introduced above become quickly unbearable when an "average" spreadsheet user (or simply a spreadsheet beginner) wishes to quickly build tables without having to master the syntax of the formula language available within the electronic spreadsheet environment. Thus, there is a need for a method to facilitate data entry in tables and to create or modify rows or columns by combining numerical values into a function using the row or column label names as variables.

The present invention provides such method. In accordance with the teachings of the present invention, data may be automatically entered into an electronic table that has at least one input column and at least one output column and at least a first and a second row. Generally, a user may enter labels into the first row for defining the input column and the at least one output column and the second row may be used for inputting data into the table. Specifically, a first label may be entered into the at least one input column and a second label into the at least one output column. In this case, the second label will be expressed as a mathematical expression that includes the first label and at least one operator. When a user enters data into the second row at a location under the first label, data will be automatically entered into the second row at a location under the second label. The data that is automatically entered is a result of a mathematical operation as defined by the mathematical expression in the second label.

The present invention, therefore, allows one to quickly determine how values in a column that is labeled as a mathematical expression are generated.

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The invention is set forth in claims of varying scopes of which Claim 12 is illustrative.

12. A computer program product on a computer readable medium for entering data into an electronic table, the table having at least one input column and at least one output column and at least a first and a second row, the first row for entering labels defining the at least one input column and the at least one output column and the second row for inputting data into the table, the computer program product comprising:

code means for entering a first label into the at least one input column and a second label into the at least one output column, ***the second label being expressed as a mathematical expression that includes the first label and at least one operator***, and

code means for automatically entering data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression. (Emphasis added.)

The Examiner rejected the independent claims (i.e., Claims 1, 10 and 11) under 35 U.S.C. §103(a) as being unpatentable over Salas et al. in view of Hatakeda et al. Applicants respectfully disagree.

Salas et al. purport to teach a data processing method for a reformattable multidimensional spreadsheet. In accordance with the teachings of Salas et al., a series of items forms a dimension along an axis of the spreadsheet. A label icon can be used by a user to describe the series of items of an axis. Repositioning of the label icons repositions respective series of items and thus redefines/rearranges the axes of the spreadsheet. Sub-axes to an axis are similarly formed by series of items associated with a respective label icon. Order of label icons in predefined areas of a working screen view determine hierarchy of main axis and sub-axes for the label icons. There is a different predefined

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area for the possible vertical axes, possible horizontal axes, and the possible orthogonal axes of the spreadsheet. A cell module holds spreadsheet data in a matrix of memory cells. A symbol table translates between current specified names of items in the spreadsheet and indexes to cells of the cell module. Thus, a user is able to rearrange and/or relabel icons in the spreadsheet screen view without losing data.

However, Salas et al. do not teach, show or suggest using a label expressed as a mathematical expression that includes another label to label a column in a table (i.e., a first label) and at least one operator as claimed.

Nor do Salas et al. teach of automatically entering data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label wherein the data entered by the user replaces the first label in the mathematical expression as claimed.

It is true in their disclosure Salas et al. teach that a user may provide mathematical expressions that use a value in a column to generate a value in another column. However, the mathematical expressions are not used as labels to columns as claimed. Rather, they are located at the bottom of the spreadsheet (see item 45 in Fig. 4a). Consequently, one cannot quickly determine how values in a column are generated as in the present invention.

Hatakeda et al. purport to teach an on-screen identification and manipulation of sources that an object depends upon. According to the teachings of Hatakeda et al., an object that is dependent upon one or more cells in a spreadsheet can be manipulated by manipulating indicators that bound the relevant cells. The object can be a spreadsheet cell formula that contains a reference to one or more cells. The object can also be a graph object that is dependent upon one or more cells. In response to the selection of one of the objects, an indicator is displayed proximate to the cell or cells that the object is

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dependent upon. If the selected object is dependent upon multiple ranges of cells, then multiple indicators are displayed. Each indicator is displayed proximate to a cell or range of cells for the purpose of highlighting or identifying that the object is dependent upon that cell or range of cells. The highlighting or identifying is acceptably achieved with on-screen indicators that are color-coded. Each indicator can border a cell or a range of cells that the object is dependent upon. Each indicator can be moved, expanded or contracted so that it includes a different cell or range of cells. The selected object is updated to be dependent upon the cells currently identified by the associated indicator or indicators.

However, just as in the case of Salas et al., Hatakeda et al. do not teach, show or suggest **using a label expressed as a mathematical expression that includes another label** (i.e., a first label) **and at least one operator to label a column in a table** as claimed.

Nor do Hatakeda et al. teach of **automatically entering data into the second row at a location under the second label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label** wherein the data entered by the user replaces the first label in the mathematical expression as claimed.

Therefore, combining the teachings of Salas et al. with those of Hatakeda et al. will not show an electronic table with at least a first column that has as a label a mathematical expression that includes the label of at least a second column. Consequently, a user will not be able to quickly determine how values in the first column are generated as in the present invention.

Since the combination of the teachings of Salas et al. and Hatakeda et al. does not teach the emboldened-italicized limitations in the above-reproduced Claim 12, Applicants submit that Claim 1, as well as its dependent claims should be allowable.

Note that although Claim 1 does not include the limitations of automatically entering data into the second row at a location under the second

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label upon entry of data by a user into the second row at a location under the first label, the data automatically entered being a result of a mathematical operation as defined by the mathematical expression in the second label etc., it does contain the limitations of **using a label expressed as a mathematical expression that includes another label** (i.e., a first label) **and at least one operator to label a column in a table.**

The other independent claim (i.e., Claim 15), which also incorporates the emboldened-italicized limitations in the above-reproduced Claim 12 and its dependent claims should be allowable as well. Hence, Applicants once more request reconsideration, allowance and passage to issue of the claims in the application.

Respectfully Submitted

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